1. Electrolysis is the breaking down of a compound using:

   ☐ heat only

   ☐ light

   ☐ a catalyst

   ☐ an electric current

2. Which metal did Davy first isolate by electrolysis in 1807?

   ☐ Gold

   ☐ Potassium

   ☐ Copper

   ☐ Iron

3. Electrolysing copper sulfate with copper electrodes is used to:

   ☐ electroplate silver

   ☐ purify copper

   ☐ produce sodium

   ☐ make oxygen

4. The only product of a hydrogen–oxygen fuel cell is:

   ☐ carbon dioxide

   ☐ oxygen

   ☐ methane

   ☐ water

5. Positive ions move towards the:

   ☐ anode (positive electrode)

   ☐ electrolyte

   ☐ cathode (negative electrode)

   ☐ power supply

6. At the anode, chloride ions are oxidised to chlorine gas.

   ☐ True ☐ False

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   ☐ to protect from corrosion

   ☐ to melt the object

   ☐ to make a cheap object look expensive

   ☐ to improve appearance

   Tick every correct option.

8. A drawback of fuel cells is that hydrogen is difficult to store and transport.

   ☐ True ☐ False

9. Negative ions move towards the negative cathode.

   ☐ True ☐ False

10. How many electrons are needed to reduce one Al^{3+} ion to an aluminium atom?

    _____

1. **an electric current**

   An electric current decomposes the electrolyte.

2. **Potassium**

   From molten potash.

3. **purify copper**

   The impure copper anode dissolves; pure copper deposits on the cathode.

4. **water**

   Hydrogen + oxygen → water.

5. **cathode (negative electrode)**

   Opposite charges attract: positive ions → negative cathode.

6. **True**

   $2Cl^- \rightarrow Cl_2 + 2e^-$.

7. **to protect from corrosion; to make a cheap object look expensive; to improve appearance**

   Electroplating coats, not melts.

8. **True**

   Hydrogen storage is a major challenge.

9. **False**

   False. Opposite charges attract, so negative ions (anions) move to the positive anode, and positive ions move to the cathode.

10. **3**

    $Al^{3+} + 3e^- \rightarrow Al$.

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